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FINAL REPORT TO OFFICE OF NAVAL RESEARCH

DoD Science and Engineering Apprenticeship Program for High School Students

1996–'97 Activities Contract No. N00014-96-1-1110

Principal Manager:

Dr. Richard L. Pfeffer

Geophysical Fluid Dynamics Institute

The Florida State University Tallahassee, FL 32306-3017

(904)-644-5594



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May 1997
The Florida State University
Tallahassee, Florida

1. INTRODUCTION

The year 1996–'97 represented our fifteenth successful DoD Science and Engineering Apprentice-ship Program for High School Students at Florida State University, sponsored by the Office of Naval Research. The program this year was again administered by the Geophysical Fluid Dynamics Institute (GFDI) under the direction of Dr. Richard L. Pfeffer. Student educational activities and work experiences were centered at GFDI.

In the spring of 1996, the guidance counselors of five local high schools were asked to recommend outstanding college-bound students who they thought would benefit most from our program. Ten students were selected to participate starting in the summer of 1996 and thirteen during the school year, 2 of whom were from the summer program, 6 of whom were from last year's program, and 5 new students during the academic year. Our student group consisted of 9 seniors, 7 juniors and 5 exceptional sophomores. The departure from our past concentration on seniors was motivated by our desire to expose students to science and scientific methodology at an earlier age. Some background information concerning the students who were selected appears in the following section. Further information pertaining to each apprentice is attached at the end of the report.

Students spent a total of 30 hours per week with the program for 10 weeks in summer and 10–20 hours per week during the school year. They participated in the research program via data handling and data processing with the aid of computer operated equipment, and in enrichment activities during the summer; including lectures, laboratory demonstrations, scientific films, field trips and a formal course and a weekly discussion session on the history of science using the book *Coming of Age in the Milky Way* by Timothy Ferris. A summary of their activities and projects is included in Section 3.

2. STUDENTS' VITAE

NAME:

Lizza Bailey

RACE:

White

SEX:

Female

HIGH SCHOOL:

Leon High School

ANTICIPATED COLLEGE:

Undecided

ANTICIPATED MAJOR:

Undecided

AWARDS/SCHOLARSHIPS:

ACTIVITIES/HOBBIES:

NAME:

Phillip Claiborne

RACE: SEX:

White Male

HIGH SCHOOL:

Auscilla Christian School

ANTICIPATED COLLEGE:

Undecided

ANTICIPATED MAJOR:

Undecided

AWARDS/SCHOLARSHIPS:

3rd place Regional Science Fair, A Honor Roll

ACTIVITIES/HOBBIES:

Baseball, Cross Country, Athletics, Weightlifting, Computers

NAME:

Robert Sidney Cox, III

RACE:

Other

SEX:

Male Leon High School

HIGH SCHOOL: ANTICIPATED COLLEGE:

University of South Florida

ANTICIPATED MAJOR:

Biology

AWARDS/SCHOLARSHIPS:

Who's Who Among American High School Students, National Merit

Scholar, Florida Academic Scholar, USF Excellence Award

ACTIVITIES/HOBBIES:

Ultimate Frisbee

NAME:

Ashish Desai

RACE:

Asian Male

SEX: HIGH SCHOOL:

Lincoln High School

ANTICIPATED COLLEGE:

University of Florida

ANTICIPATED MAJOR:

Biochemistry

AWARDS/SCHOLARSHIPS:

National History and Government, Who's Who Among High School Students, Best BIONR Student, NHS Scholarship, Florida Academic

Scholarship, 1st place Latin Student, 1st Place History Fair

ACTIVITIES/HOBBIES:

Sports (Baseball, Football, Soccer, Basketball), Disk Jockeying

NAME:

Shannon Dunn

RACE:

Other .

SEX:

Female

HIGH SCHOOL:

Godby High School

ANTICIPATED COLLEGE:

FSU

ANTICIPATED MAJOR:

Undecided

AWARDS/SCHOLARSHIPS:

National Honor Society, National French Honor Society, Awards for accounting, English, Drama, Science, Academic Merit; City of Lights

Winter Festival Jr. Award for Piano, Outstanding Student Awards, Valedictorian of Griffin Middle School (1994), Who's Who of Band

and Academics

ACTIVITIES/HOBBIES: Playing Piano, Saxophone and Flute; Singing, Dancing and Acting in

Community Theatre; Horseback Riding, Writing Poetry

NAME: Allison Eagen

RACE: White SEX: Female

HIGH SCHOOL: Leon High School

ANTICIPATED COLLEGE: Undecided ANTICIPATED MAJOR: Accounting

AWARDS/SCHOLARSHIPS: 2 Time All Big Bend in Cross-Country, All Big Bend in Track, Sec-

retary of Exchangetts (Service Club), Treasurer of MAT (Math Club), 2nd and 3rd place at French Competition, Treasurer of Pierian

(Honor Society)

ACTIVITIES/HOBBIES: Running, Music, Service Clubs

NAME: David Henderson

RACE: White SEX: Male

HIGH SCHOOL: Jefferson County

ANTICIPATED COLLEGE: Undecided ANTICIPATED MAJOR: Undecided

AWARDS/SCHOLARSHIPS:

ACTIVITIES/HOBBIES: Working on computers

NAME: Daanish Hoda

RACE: Asian SEX: Male

HIGH SCHOOL: Lincoln High School

ANTICIPATED COLLEGE: FSU ANTICIPATED MAJOR: Undecided

AWARDS/SCHOLARSHIPS: NHS, National Merit Finalist, Salutatorian, State and National

Awards in Math and English Achievement

ACTIVITIES/HOBBIES: Ultimate Frisbee

NAME: Adrianne Holmes

RACE: Black SEX: Female

HIGH SCHOOL: Lincoln High School

ANTICIPATED COLLEGE: Undecided ANTICIPATED MAJOR: Chemistry

AWARDS/SCHOLARSHIPS: National Honor Society, Mu Alpha Theta, Who's Who Among High

School Students, National History and Geography Award, First Place

District History Fair (1995)

ACTIVITIES/HOBBIES: Service Club, Youth Choir Member, SADD

NAME: Mitesh Jivan

RACE: Asian SEX: Male

HIGH SCHOOL: Godby High School

ANTICIPATED COLLEGE: Undecided ANTICIPATED MAJOR: Undecided

AWARDS/SCHOLARSHIPS: ACTIVITIES/HOBBIES:

NAME: Tammy Jones

RACE: Black SEX: Female

HIGH SCHOOL: Godby High School

ANTICIPATED COLLEGE: Undecided

ANTICIPATED MAJOR: Veterinarian Medicine

AWARDS/SCHOLARSHIPS: Honor Roll, Who's Who, Academic G

ACTIVITIES/HOBBIES:

NAME: Durga Kode
RACE: Asian
SEX: Female

HIGH SCHOOL: Leon High School

ANTICIPATED COLLEGE: Undecided ANTICIPATED MAJOR: Undecided AWARDS/SCHOLARSHIPS: Honor Roll

ACTIVITIES/HOBBIES: Playing Basket ball

NAME: Julie Matthews

RACE: White SEX: Female

HIGH SCHOOL:

ANTICIPATED COLLEGE:

ANTICIPATED MAJOR:

AWARDS/SCHOLARSHIPS:

Leon High School
University of Florida
Sports Medicine
Honor Roll

ACTIVITIES/HOBBIES: Weightlifting, Swimming

NAME: Marcus Mills

RACE: Black SEX: Male

HIGH SCHOOL: Godby High School
ANTICIPATED COLLEGE: Florida State University

ANTICIPATED MAJOR: Undecided

AWARDS/SCHOLARSHIPS: FSU Incentive Scholarship, Scholarship Award from Omega Psi Phi,

Vocational Gold Seal Scholarship, Varsity Football Letter

ACTIVITIES/HOBBIES: Music, Sports

NAME:

Vishnu Pabbathi

RACE:

Asian Male

SEX:

Leon High School

HIGH SCHOOL:

Undecided

ANTICIPATED COLLEGE: ANTICIPATED MAJOR:

Undecided

AWARDS/SCHOLARSHIPS:

ACTIVITIES/HOBBIES:

Basketball, Running

NAME:

Keysha Peterson

RACE:

Black

SEX:

Female

HIGH SCHOOL:

Rickards High School

ANTICIPATED COLLEGE: ANTICIPATED MAJOR:

Undecided Undecided

AWARDS/SCHOLARSHIPS:

ACTIVITIES/HOBBIES:

Basketball, Running

NAME:

Terra Sherlock

RACE:

White

SEX:

Female

HIGH SCHOOL:

Leon High School

ANTICIPATED COLLEGE: ANTICIPATED MAJOR:

Undecided **Physics**

AWARDS/SCHOLARSHIPS:

Golden Glove Award (soccer), Sheriff's Ride Along and Shooting

Program Awards, 1st Place in 3rd Grade Science Fair

ACTIVITIES/HOBBIES:

1st Sergeant in the Sheriff's Explorers, Vice-President in Nice Science

Club, Communications Officer of Phoenix Science Club, Junior Var-

sity and Varsity Soccer

NAME:

Aruna Subramani

RACE:

Asian Female

SEX:

Lincoln High School

HIGH SCHOOL: ANTICIPATED COLLEGE:

University of Florida

ANTICIPATED MAJOR:

Science

AWARDS/SCHOLARSHIPS:

Honor Roll, Special Recognition Award, Academic Awards in Eng-

lish, Social Studies, French; Principal Awards in 9th, 10th, and 11th

Grades

ACTIVITIES/HOBBIES:

Traveling

NAME:

Benjamin Switzer

RACE:

White Male

SEX: HIGH SCHOOL:

Godby High School

ANTICIPATED COLLEGE:

Undecided

ANTICIPATED MAJOR:

Computer Science Honor Roll

AWARDS/SCHOLARSHIPS: **ACTIVITIES/HOBBIES:**

Martial Arts, Chess, Quotes Collector

NAME:

Michelle Wallace

RACE:

Black

SEX:

Female

HIGH SCHOOL:

Lincoln High School University of Miami

ANTICIPATED COLLEGE: ANTICIPATED MAJOR:

Biology

AWARDS/SCHOLARSHIPS:

National Honor Society, 1995 1st place Leon County History Fair, Biological Institute of ONR Math Award, Biological Institute of

ONR Science Award

ACTIVITIES/HOBBIES:

Piano

NAME:

Jereme Wilson

RACE:

Black

SEX:

Male Godby High School

HIGH SCHOOL: ANTICIPATED COLLEGE:

Undecided

ANTICIPATED MAJOR: AWARDS/SCHOLARSHIPS:

Undecided 1st place Public Speaking, 1st place Poetry Contest, Honor Roll, Cer-

tificates of Academics, Physical Education Awards, Essay Contest

ACTIVITIES/HOBBIES:

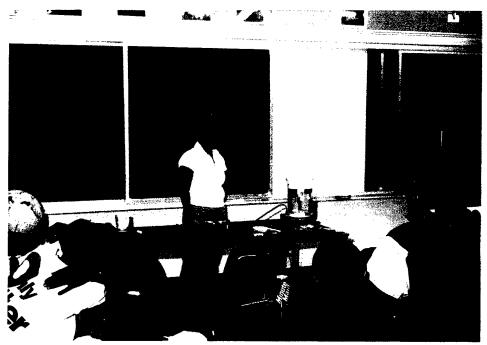
Singing, Writing Poetry

3. STUDENT WORK PROJECTS AND INSTRUCTION

Twenty-one students participated in digitizing velocity vector data from photographs of flow fields obtained in laboratory experiments that simulate the influence of mountains on the atmospheric jet stream, and two assisted in data analysis using computer programs on PCs and the VAX. These activities were part of a larger project on studies of the interaction of bottom topography with overlying baroclinic waves investigated by Drs. R. L. Pfeffer and R. Kung. The students' work was supervised by Mr. Bala B. Kode.

The major project in which the students participated during the summer was the analysis of photographic velocity data from laboratory experiments on the interaction of topography with baroclinic waves.

The experiments were conducted in a thermally driven rotating annulus of fluid.



Oceanography Prof. Ruby Krishnamurti (Fellow of the AMS and APS) demonstrates thermal oscillators to the high school student group.

The data from the experiments were obtained by means of a camera, mounted at the top of a rotating annulus of fluid, which recorded the movements of laser-illuminated particles suspended in the fluid. The camera produced a sequence of still photographs; in each photograph the movement of every particle appeared as a string of dots. By digitizing the positions of these dots and calculating the distance between

dots and the orientation of each string of dots, one can determine the velocity field as a function of time.

Fourier analyses and energetics calculations of such data provide valuable information about the behavior of baroclinic waves in the presence of bottom topography.

The students had the opportunity to gain experience in the use of digitizing equipment, personal computers, and video monitors which display the work graphically as it is being digitized. They were also able to see and discuss the results of a first-level analysis of the digitized data performed on the GFDI DEC VAX computer cluster. During the course of the summer, the students worked with photographs from several different experiments, which allowed them to see the effects of variations in experimental parameters such as the difference in temperature between the inner and outer walls of the bath, the speed of rotation, and the presence or absence of topographic barriers with different shapes.

The instruction and training given to the high school students concerning their work as apprentices went well beyond that needed to do the job. Efforts were made by the faculty and staff to make their work experience a learning process and an introduction to scientific methodology. Our goal was to ensure the students' understanding of the relationships between theoretical models and observable phenomena, such as the jet stream and ocean currents, (e.g., the Gulf Stream and the Kuroshio Current) which affect the transfer of heat from the tropics to the arctic. This was accomplished by explaining in detail the goals of the program, the scientific methodology, the implications of the experimental and related theoretical results and the contributions of the students' work to the overall project.

4. ENRICHMENT ACTIVITIES

Aside from the students' activities as apprentices, they participated in a variety of other educational activities. These included a series of talks on research topics covering a broad spectrum of scientific disciplines. Talks were given by undergraduate and graduate students Mike Kirby and Scott Applequist, and by Drs. Furbish, Gruender, Kasha, Ruby Krishnamurti, Kung, Long, Loper, Magnan, Pfeffer and Ruscher on topics ranging from the modeling of the Earth's Interior to Flavenoids. In addition, the students

participated in discussions with Dr. Long on Coming of Age in the Milky Way, an exciting book on the history and methodology of physical science by Timothy Ferris. A series of scientific films was also selected and shown by Dr. Kung. These covered topics such as astronomy, the strange new science of deterministic chaos, space exploration, atmospheric phenomena, volcanos and others. Drs. Kung and Ruby Krishnamurti also engaged the students in a series of scientific experiments in which different natural phenomena were simulated in the laboratory. A list of these activities is given in Table 1. Dr. Long also took students on field trips to the National Weather Service at the Airport, Channel 27 TV station, the FSU Planetarium, the National Magnet Laboratory and the FSU Nuclear Physics facility.

Ten students also took advantage of another opportunity offered by the program — namely, a course of their choice, with tuition and books paid for by the program. Seven of the students took a Psychology course, one a Nutritional Science class and two a Mathematics course. Eight of these courses were for college credit and two were audited.

5. CONCLUSION

Questionnaires completed at the end of the summer program of enrichment activities revealed that the students felt that, aside from the monetary rewards, they had benefited a great deal from both the hands-on work experience and the enrichment program. This was especially true of the younger students. They were grateful for the opportunity to work in a scientific environment and acquire new skills and experience. Faculty and staff mentors reported that the students were bright, attentive, well motivated and willing to work. Their contribution to the various projects was also significant. The digitizing work was done carefully and accurately and hence contributed substantially to a much needed data base for further analysis and study.



Philosophy Professor David Gruender discusses the life and scientific accomplishments of Galileo with the high school students.

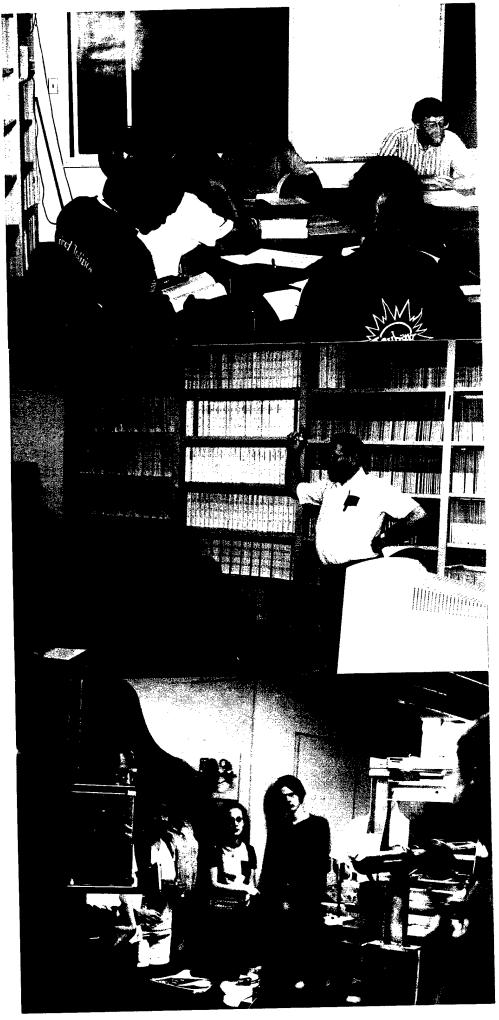
In general, the students felt financially rewarded and scientifically enriched by their experience in the program. We feel that the students acquired a certain maturity and confidence which should be a great asset to them during their final years in high school, college and their chosen careers.



Chemistry Professor Kasha (Member of the National Academy of Sciences) discusses "Flavenoids Flower Color, Lasers and Health" with the high school students.

Distinguished Research Professor Loper explains earth interior processes to the high school students.

Geology Professor Furbish discusses the dynamics of river meanders with the high school students.



Dr. Long conducts a discussion with the high school students of a chapter of the book "Coming of Age in Milky Way" by Timothy Ferris.

Distinguished Research Professor Pfeffer conducts a session entitled "Name that Planet" using JPL photos extracted from the internet.

Mechanical Engineering Professor Buzyna explains apparatus used for laboratory studies of supersonic flow.

1996 ONR/GFDI Summer Enrichment Program Schedule Time: 2:00 PM to 3:00 PM; Place: GFDI Reading Room or as indicated

Monday <i>Films</i>	Tuesday Discussions**	Wednesday Talks	Thursday Lab. Demonstrations
		12	13
June 10 (V70492) The Shores of the Cosmic	Dr. Christopher Long	Dr. David Gruender Galileo and How the World	Dr. Richard Pfeffer
Ocean	The Dome of Heaven &	Turns	Welcome
(COSMOS Episode 1)	Raising the Roof	19	20
17 (V70495) Travels in Space and Time	Dr. Christopher Long The Discovery of the Earth	Dr. David Furbish Dynamics of River Meanders	Dr. Robin Kung Laboratory Experiments at GFDI
(COSMOS Episode 8)			
24 (V70897)	25	26	27
Searching for Black Holes	Dr. Christopher Long The Sun Worshippers	Dr. David Furbish Bubble Dynamics and Volcanic Eruptions	Dr. Ruby Krishnamurti Rayleigh-Benard Convection
(The Astronomers Part 2)	The bun worshippers	Volcamo Erapaona	They rought Dominion to the control of the control
July 1 (V70900)	2	3	4
Stardust	Dr. Christopher Long	Dr. Paul Ruscher Weather Forecasting	Holiday
(The Astronomers Part 5)	The World in Retrograde		
8 (Lab. Demo.)	9	10	11
Dr. George Buzyna (at M. E. Lab.)	Dr. Christopher Long	Dr. Dave Loper The Earth's Interior	Dr. Ruby Krishnamurti
Supersonic Flow	Newton's Reach		Thermal Oscillators
15 (F382490)	16 Dr. Christopher Long	17 Dr. Jerry Magnan	18 Dr. Robin Kung
Thunder in the Skies	A Plumb Line to the Sun	Chaos in Plasmas and Water Drops	Annulus Experiments
(Connection 6)		24	25
22 (F382520)	23 Dr. Christopher Long	Dr. Mike Kasha Flavenoids: Flower Color,	Dr. Ruby Krishnamurti
Countdown	Deep Space	Lasers and Health	Double-Diffusive Instability
(Connection 9) 29 (V70306)	30	31	August 1
Strange New Science of	Dr. Christopher Long	Dr. Richard Pfeffer Name That Planet	Dr. Robin Kung
Chaos (NOVA)	Island Universes	114410 14411 144100	Rotating Fluid Flows
5 (GFDI Video)	6	7	8 (F382450)
Hawai'i Born of Fire	Dr. Christopher Long	Mr. Mike Kirby Math Modeling	(Film) Death in the Morning
O IOMA)	Einstein's Sky		(Connection 2)
(NOVA)	12	14	15
12 (GFDI Video) Cyclone	Dr. Christopher Long The Expansion of the	Mr. Scott Applequist Statistical Weather	Dr. Ruby Krishnamurti
(National Geographic)	Universe	Prediction	Mixing and Unmixing
()	<u></u>		<u> </u>

^{*} Field Trips will be scheduled for the Fridays of the Summer Program.

** Chapter by chapter discussion of "Coming of Age in the Milky Way" by Timothy Ferris, Anchor Books, 1988.

	1.	Name: Bailey Li	zza
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	2.		
PII Redact	100	School Address, 19 ⁹⁶⁻¹⁹⁷ , if applicable Le	on High (904)488-1971
	3.	na	me phone
		550 Tennessee St., Tallahassee, FL	
	4.	Expected Major/University Enrolled in: Un	
	5.	Dast Grade Comp	School: (x) Public () Private
	6.	Race/Ethnicity: (Voluntary) ()Black (X)V	
	7.	Sex. () Ividic () I small	'GPA:
	8.	Installation Geophysical Fluid Dynamics	Institute, Florida State University
	9.	name Dr. Robin J. Kung, Associat Dr. Richard L. Pfeffer, Pro	e Scholar/Scientist fessor of Meteorology and GFDI Associa
		name	title
	10.	Principal Discipline of Research: Atmosphe	eric Science
	11.	Major Tasks Performed: Digitizing of v	relocity vectors from photographs of
		flow fields obtained in laboratory ex	periments.
	12.	Honors, Awards and Scholarships:	
	13.	Activities/Hobbies:	

1.	Name:	Claborne	Phillip	
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cted	4			
3.	School A	ddress, 19 <u>95-'96</u> , if app	olicable <u>Aŭscilla Christ</u>	phone
	Monticel	lo. FL	name	phone
4.	Expected	Major/University Enroll		
5.		de Completed <u>10</u>	Type of School: ()Public	
6.	Race/Eth	nicity: (Voluntary) ()B	lack (X)White ()Hispani	c ()Asian ()Other
7.)Male ()Female	WGPA:	
0	Itallati	on Geophysical Fluid	Dynamics Institute, Flo	orida State <u>Universit</u>
8.	installatio	name		
		Dr. Robin J. Kung,	Associate Scholar/Scieffer, Professor of Met	entist
9.	Mentor(s	name	title	
			Al Calana	
10.			Atmospheric Sciences	
11.	Major Ta	isks Performed: <u>Digitiz</u>	ing of velocity vector	s from photographs of
	Flow fie	elds obtained in labor	atory experiments.	
12.	Uonors	Awards and Scholarshins	: 3rd place Regional	Science Fair, A Honor
12.	Roll.	Awards and bonotarship.		
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13.	Activitie	s/Hobbies: Baseball, C	ross Country, Athletic	s, Weightlifting,
	Compute	ers, etc.		
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	1.	Name:	Cox III	Robert Sidney	·	
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			Pennessee St., Ta	llahassee, FL		
	4.	Expected	Major/University	Enrolled in: Biology/New	College of US	SF
	5.		de Completed 12			
	6.	Race/Eth	nicity: (Voluntary)	()Black ()White ()Hi	spanic ()Asian	(X)Other
	7.	Sex: ())Male ()Female	wGPA:	 	
	8.	Installatio	name	Fluid Dynamics Institute		te University
	9.	Mentor(s	Dr. Robin J. K Dr. Richard L. name	Kung, Associate Scholar/S Pfeffer, Professor of M title	Scientist Meteorology and	d GFDI <u>Asso</u> ciat
	10.	Principal	Discipline of Rese	earch: Atmospheric Science	ees	
	11.	Major Ta	asksPerformed:	gitizing of velocity vec	ctors from pho	tographs of
		flow fie	elds obtained in	laboratory experiments.		
	12.	Honors,	Awards and Schola	arships: Who's Who Among A	American High	School Students
		National	L Merit Scholar,	Florida Academic Scholar	r, USF Excelle	nce Award
		<u> </u>				
	13.	Activitie	es/Hobbies: <u>Ultin</u>	mate Frisbee		
		<u></u>				

1.	Name:	Desai		Ashish		
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3.	School Ad	dress, 19 <u>95-</u>	<u>'96,</u> if appli	cable Lincoln High	(904) 487- phone	
	3838 Tro.	jan Trail, Ta	llahassee,	name FL	phone	
					Iniversity of Fl	ori da
4.				lin: Biochemistry/U		<u> </u>
5.		e Completed		ype of School: (x)Put		Other
6.		•		ck ()White ()Hispa		()Other
7.		Male ()Fem		WGPA: <u>4.67</u>		
8.	Installatio	n Geophysica	l Fluid Dy	namics Institute, I	Florida State Un	iversity
		name		ssociate Scholar/Sc		
9.	Mentor(s)	n n. 1	d L. Pfeff	er, Professor of Me	eteorology and G	FDI Associa
7.	111011101(5)	name		title		
10.	Principal	Discipline of R	Lesearch:	Atmospheric Science	es	
11.				g of velocity vector		aphs of
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12.				National Histroy		
	Who Amon	g High School	Students,	Best BIONR studen	t, NHS Scholarsh	<u>ip, Flo</u> rida
	Academic	Scholarship,	Ist place	Latin Student, Is	t Place History	Fair.
13.	Activities	/Hobbies: Pla	ying sport	s (baseball, footb	all, soccer, bas	ketball),
10.				n w/problems, lister		•
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	1.	Name:	Dunn	Shannon		
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	4.	Expected	l Major/Universi	ity Enrolled in: Undecide	ed/FSU	
	5.	Last Gra	de Completed	10 Type of School	:(x)Public()Pri	vate
	6.	Race/Etl	nnicity: (Volunta	ry) ()Black ()White	()Hispanic ()As	ian (χ)Other
	7.)Male (x)Fem	*****		
	8.	Installati	name	l Fluid Dynamics Inst		tate University
	9.	Mentor(J. Kung, Associate Sch d L. Pfeffer, Professo t	or of Meteorology	r and GFDI Associate
	10.	Principa	l Discipline of R	Research: Atmospheric S	Science	
	11.	Major T	asks Performed:	Digitizing of veloci	ty vectors from p	photographs of
		flow fi	elds obtianed	in laboratory experime	ents.	
	12.	Honors,	Awards and Sch	nolarships: National Ho	nor Society, Nati	ional French Honor
		Society	, Awards for A	accounting, English, D	rama, Science, Ac	cademic Merit, etc.,
		City of	Lights Winter	Festival Jr. Award f	or Piano, outstar	nding student Awards,
		Valedio	ctorian of Grif	fin Middle School('94), Listed in Who	's Who of Randt Academic
	13.	Activition	es/Hobbies: _Pla	wing Piano, Saxophone	, and flute; sing	gining, dancing and
		acting	in community t	heatre plays; horseba	ck riding; reading	ng; writing poetry;
		cleanin	ng, listening t	to music, going to con	certs; working;	socializing;
		doing h	nomework.			· · · · · · · · · · · · · · · · · · ·
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1	1.	Name: _	Eagen		Allison		
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	3.	School A	Address, 19_9:	$\frac{3-196}{9}$, if applica	able Leon High name		one
		500 W.	Tennessee St	reet, Tallahas	-	*	<u> </u>
	4.	Expecte	d Major/Unive		n: Accounting/u		
:	5.		ade Completed		pe of School: (x) P		
,	6.	Race/Et	hnicity: (Volur	itary) ()Black	(X)White ()Hi	spanic ()Asian	()Other
	7.	Sex: ()Male (狂	emale	WGPA:	<u> </u>	
	8.	Installat	ion Geophysic	cal Fluid Dyna	amics Institute,	. Florida State	<u>University</u>
	9.	Mentor	Da Pohia	n J. Kung, Ass ard L. Pfeffer	sociate Scholar/ r, Professor of title	Scientist Meteorology ar	<u>d GFDI Ass</u> ociate
	10.	Principa	al Discipline of	f Research:At	tmospheric Scien	ice	
	11.	Major 7	Tasks Performe	ed: Digitizing	g of velocity ve	ectors from pho	tographs of
		flow fi	elds obtaine	d in laborator	ry experiments.		
	12.	Honors	, Awards and S	Scholarships: 21	nd time All Big	Bend in cross	country, All.
•		Big Ber	ıd in Track,	Sec. of Exchar	ngettes (service	e club), Treası	rer MAT (Math
		Club),	2nd & 3rd pl	ace at French	competition, Tr	reasurer of Pie	e <u>rian (Hono</u> r Societ
	13.	Activit	ies/Hobbies: _	Running, Mus:	ic, Service club	os.	
							
				•			
							

1.	Name:	Henderson		David			
1.	Ivanic.	last		first	_		
2.		1 301.				<u></u>	
cted	Q.			11 Taffanan	County	.	
3.	School	Address, 19 <u>96-</u>	97, if applic	able hig name	h	phor	ne '
	Montic	ello, FL					
4.	Expect	ed Major/Univers	sity Enrolled	in:Undecided			
7. 5.		rade Completed_		pe of School: (X)Public ()	Private	
6.	Race/F	Ethnicity: (Volunta					()Other
7.		(X)Male ()Fen		WGPA: $_^3$	•3		
8.		ationGeophysica		amics Institut	e, Florida	State 1	University
	3 f	Da Dicher	J. Kung, As rd L. Pfeffe	sociate Schola r, Professor o	r/Scientis	t ogy and	GFDI Assoc
9.	Mentor	r(s):		title			
	n : .	pal Discipline of l	Passarch: At	mospheric Scie	nce		
10.	Princip	pai Discipline of I	Computor 1	narades and re	nairs etc		
11.	Major	Tasks Performed	· Compared a	pgrades and re	paris, 555		
12.	Honor	s, Awards and Sc	:holarships: <u>N</u>	ational Beta C	lub Member		
12.	Honor	s, Awards and Sc	cholarships: <u>N</u>	ational Beta C	lub Member		
12.	Honor	s, Awards and Sc	cholarships: <u>N</u>	ational Beta C	lub Member		
12. 13.	Activi	ties/Hobbies: PC	hardware/sc	ftware upgrade	s, repairs	, Sysop	of Bulleti
	Activi		hardware/sc	ftware upgrade	s, repairs	, Sysop	of Bulleti

	1.	Name: _	Hoda		Daanish		
		Ivanio	last		first		•
I Redact	2.						<u> </u>
	3.	School	Address, 19 ^{95–1}	'96, if applica	ble Lincoln High		87-2110
			rojan Trail, Ta		name	ph	one
	4.	Expecte	ed Major/Univer		n: Undecided/Flor		
	5.		ade Completed_		e of School: (x)Pub		
	6.	Race/E	thnicity: (Volunt	ary) ()Black	()White ()Hispa	nic (X)Asian	()Other
	7.	Sex: ((x)Male ()Fer	nale	WGPA:4.73		
	8.	Installa	name		mics Institute, F		University
	9.	Mentor	Dr. Robin (s): Dr. Richa: name	J. Kung, Ass	ociate Scholar/Sc , Professor of Me title	ientist teorology an	d GFDI Associa
	10.	Princip	al Discipline of	Research: Atm	ospheric Sciences		
	11.				of velocity vect		tographs of
•		-	ields obtained				
	12.	Honors	Awards and So	cholarships:	HS, National Meri	t Finalist,	Salutatorian,
	12.				ls in Math, Englis		
				·			
	13.	Activit	ies/Hobbies: P	ick-up games	around neighborho	ood, ultimate	e Frishee.

1.	Name: Holmes Adrianne .
	last first
2.	
3.	School Address, 19 96 , if applicable Lincoln High (904) 487-2110 name phone
	3838 Trojan Trail, Tallahassee, FL
4.	Expected Major/University Enrolled in: Biology/University of Florida
5.	Last Grade Completed 12 Type of School: (x)Public ()Private
6.	Race/Ethnicity: (Voluntary) (X)Black ()White ()Hispanic ()Asian ()Other
7.	Sex: ()Male (x)Female WGPA: 3.91
8.	Installation Geophysical Fluid Dynamics Institute, Florida State University name
9.	Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate name title
10.	Principal Discipline of Research: Atmospheric Science
. 11.	Major Tasks Performed: Digitizing velocity vectors from photographs of
	flow fields obtained in laboratory experiments.
12.	Honors, Awards and Scholarships: National Honor Society, University of Florid
·	Minority Scholarship, Clark Atlanta University Tuition Scholarship, Who's
	Who Among American High School Students.
13.	Activities/Hobbies: Service Club, Youth Choir Member, SADD.

1.	Name:Mitesh	
	last first	•
2.		
I Redacted		
3.	School Address, 1996-'97, if applicable Godby High School (904) 488-	1325
	name phone 1717 W. Tharpe St., Tallahassee, FL	
4.	Expected Major/University Enrolled in: Undecided	
5.	Last Grade Completed 11 Type of School: (x)Public ()Private	201
6.	Race/Ethnicity: (Voluntary) ()Black ()White ()Hispanic (4)Asian ()Other
7.	Sex: (X)Male ()Female WGPA:	
8.	Installation Geophysical Fluid Dynamics Institute, Florida State Un	<u>iversit</u> y
0.	name	
0	Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GF	<u>. DT Asso</u> ciat
9.	name title	•
10	Principal Discipline of Research: Atmospheric Science	
10.	from photog	caphs of
. 11.	flow fields obtained in laboratory experiments.	
		
12.	. Honors, Awards and Scholarships:	 .
12	Activities/Hobbies:	
13.	. Activities/Hobbles.	
	•	

Name: Jones	Tammy	
last	first	
		<u> </u>
		201 2100 2005
School Address, 1995-196, if appl	ileable	904) 488–1325 phone
1717 W. Tharpe Street, Tallaha		phone
Expected Major/University Enrolle	d in: Veterinarian Medicir	ne
Race/Ethnicity: (Voluntary) (X)Bla	ack ()White ()Hispanic	()Asian ()Other
•	WGPA: 3.96	
Installation Geophysical Fluid D	ynamics Institute, Floric	da State University
Dr. Robin J. Kung	Associate Scholar/Scients fer, Professor of Meteoro title	ist ology and GFDI Associ
Principal Discipline of Research:	Atmospheric Science	
		n photographs of flow
Honors, Awards and Scholarships:	Honor roll, published:	in Who's Who Academic
Honors, Awards and Scholarships:	Honor roll, published:	in Who's Who Academic
	Honor roll, published:	in Who's Who Academic
	Honor roll, published:	in Who's Who Academic
"G", etc.		
"G", etc.		
	School Address, 1995-196, if apple 1717 W. Tharpe Street, Tallaha. Expected Major/University Enrolled Last Grade Completed 11 Race/Ethnicity: (Voluntary) (X)Blaces: ()Male (X)Female Installation Geophysical Fluid Daname Dr. Robin J. Kung, Mentor(s): Dr. Richard L. Pfefiname Principal Discipline of Research: Major Tasks Performed: Digitiz	School Address, 1995-'96, if applicable Godby High (name 1717 W. Tharpe Street, Tallahassee, FL Expected Major/University Enrolled in: Veterinarian Medicing Last Grade Completed 11 Type of School: (x)Public (Race/Ethnicity: (Voluntary) (X)Black ()White ()Hispanic Sex: ()Male (X)Female WGPA: 3.96 Installation Geophysical Fluid Dynamics Institute, Floridame Dr. Robin J. Kung, Associate Scholar/Scient: Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteore Address of Meteore (Name 2012).

1. Name:	1	Name: Kode Durga	
School Address, 19 96-197, if applicable Leon High (904) name phone 550 Tennessee St., Tallahassee, FL 4. Expected Major/University Enrolled in: 5. Last Grade Completed 10 Type of School: (x)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black ()White (x)Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA: 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung., Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate Itile 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments.	1.	, ,,	
School Address, 1996-197, if applicable Leon High (904) name phone 550 Tennessee St., Tallahassee, FL 4. Expected Major/University Enrolled in: Undecided 5. Last Grade Completed 10 Type of School: (x)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black ()White (χ)Hispanic ()Asian ()Other 7. Sex: ()Male (x)Female WGPA: 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J, Kung, Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments.	to the second second second		
4. Expected Major/University Enrolled in: Undecided 5. Last Grade Completed 10 Type of School: (X)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black ()White (x)Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA: WGPA: 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung., Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate Of Meteorology and GFDI Associate Of Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Undecided In Index Institute (Institute) Private (Ins		name	gh (904) phone
5. Last Grade Completed_10_ Type of School: (X)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black ()White (x)Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA:	4		d
6. Race/Ethnicity: (Voluntary) () Black () White (x) Hispanic () Asian () Other 7. Sex: () Male (X) Female WGPA:		Last Condo Completed 10 Type of School:	(X)Public ()Private
8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J, Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: 13. Honors, Awards and Scholarships:		Race/Ethnicity: (Voluntary) ()Black ()White (X)Hispanic ()Asian ()Other
8. Installation Comparison of Park Robin J, Kung, Associate Scholar/Scientist	7.	Sex. ()Iviale ()I email	
9. Mentor(s): Dr. Robin J, Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate Scholar Science 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: 13. Honors, Awards and Scholarships:	8.	Installation Geophysical Fluid Dynamics Instit	
11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships:	9.	Mentor(s): Dr. Robin J, Kung, Associate School Dr. Richard L. Pfeffer, Professor name title	of Meteorology and GFDI Associa le
11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships:	10.	Principal Discipline of Research: Atmospheric S	cience
flow fields obtained in laboratory experiments. Honors, Awards and Scholarships:	11.	I. Major Tasks Performed: Digitizing of velocit	y vectors from photographs of
	•	flow fields obtained in laboratory experime	ents.
13. Activities/Hobbies:	12.	2. Honors, Awards and Scholarships:	
13. Activities/Hobbies:			·
15. 1tentines, 11000100.	12	3 Activities/Hobbies:	
	13.		

last first 2.	1.	Name: Matthews Julie .
School Address, 19 96 , if applicable Leon High		C
3. School Address, 19_96_, if applicable Leon High	2.	
14. Expected Major/University Enrolled in: Sports Medicine/University of Florida 5. Last Grade Completed 12 Type of School: (X)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black (x)White ()Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA: 4.0 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung, Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Association name title 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments.	edacted]	School Address, 19 50 , if applicable = 500
5. Last Grade Completed 12 Type of School: (X)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black (X)White ()Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA: 4.0 8. Installation Geophysical Fluid Dynamics Institute, Florida State University	σ.	name phone
5. Last Grade Completed_12 Type of School: (X)Public ()Private 6. Race/Ethnicity: (Voluntary) ()Black (X)White ()Hispanic ()Asian ()Other 7. Sex: ()Male (X)Female WGPA: 4.0 8. Installation Geophysical Fluid Dynamics Institute, Florida State University	4.	Expected Major/University Enrolled in: Sports Medicine/University of Florida
6. Race/Ethnicity: (Voluntary) () Black (x) White () Hispanic () Asian () Other 7. Sex: () Male (x) Female WGPA: 4.0 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung, Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associatelle 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Honor roll		
7. Sex: ()Male (x)Female WGPA: 4.0 8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung, Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate Scholar Science 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Honor roll		
8. Installation Geophysical Fluid Dynamics Institute, Florida State University name Dr. Robin J. Kung, Associate Scholar/Scientist 9. Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associated Science 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Honor roll		The state of the s
9. Mentor(s): Dr. Robin J. Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate Scholar/Scientist 10. Principal Discipline of Research: Atmospheric Science 11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Honor roll	8.	
11. Major Tasks Performed: Digitizing of velocity vectors from photographs of flow fields obtained in laboratory experiments. 12. Honors, Awards and Scholarships: Honor roll	9.	Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associ
flow fields obtained in laboratory experiments. Honors, Awards and Scholarships: Honor roll	10.	Principal Discipline of Research: Atmospheric Science
12. Honors, Awards and Scholarships: Honor roll	11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of
		flow fields obtained in laboratory experiments.
13. Activities/Hobbies: Weightlifting, Swimming.	12.	Honors, Awards and Scholarships: Honor roll
13. Activities/Hobbies: Weightlifting, Swimming.		
13. Activities/Hobbies: Weightlifting, Swimming.		
	13.	Activities/Hobbies: Weightlifting, Swimming.
		·

	1.	Name: Marcus .
		last first
(PII Redac	2.	
(FII Kedad	3.	School Address, 19_96 , if applicable Godby High (904) 488-1325
	3.	1717 W. Tharpe St., Tallahassee, FL name phone
	4.	Expected Major/University Enrolled in: Undecided/Florida State University
	5.	Last Grade Completed 12 Type of School: (X)Public ()Private
	6.	Race/Ethnicity: (Voluntary) (X)Black ()White ()Hispanic ()Asian ()Other
	7.	Sex: (x)Male ()Female WGPA: 3.7
	8.	Installation Geophysical Fluid Dynamics Institute, Florida State University name
	9.	Mentor(s): Dr. Robin J. Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate name title
	10.	Principal Discipline of Research: Atmospheric Science
	11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of
		flow fields obtained in laboratory experiments.
	12.	Honors, Awards and Scholarships:FSU Incentive Scholarship, Scholarship Award
		from Omega Psi Phi, Vocational Gold Seal Scholarship, Varisity Football letter
	13.	Activities/Hobbies: Music, reading, sports

1	Name: Pabbathi Vishnu
1.	last first
2.	
edacted	
3.	School Address, 19 96 , if applicable Leon High (904) 488-1971 phone
	name phone 500 W. Tennessee Street, Tallahassee, Florida
	The state of the English of the Undecided
4.	Expected Major/University Enrolled in: Undecided Last Grade Completed 10 Type of School: (x)Public ()Private
5.	Bust Grade Company 11
6.	Race/Ethnicity: (Voluntary) () Black () White ()========= ()
7.	Sex: (X)Male ()Female WGPA:
8.	Installation Geophysical Fluid Dynamics Institute, Florida State University
	name Dr. Robin J. Kung, Associate Scholar/scientist
9.	Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDT Assoc
	name title
10.	Principal Discipline of Research: Atmospheric Science
11.	Major Tasks Performed: Working on the computer and printing out plots of
	the laboratory experiments
10	Honors, Awards and Scholarships:
12.	Honors, Awards and Scholarships.
	, , , , ,
13.	Activities/Hobbies: Playing Basketball, running.
13.	Activities/Hobbies: Playing Basketball, running.
13.	Activities/Hobbies: Playing Basketball, running.

1.	Name: Peterson Keysha
	last first
2.	
dacted	2.1.1.1. 10.96-197 if applicable Richards (904) 488-1783
3.	School Address, 1996-197, if applicable Richards (904) 488-1783 name phone
	3013 Jim Lee Rd., Tallahassee, FL
4	Expected Major/University Enrolled in: Undecided
4.	Last Grade Completed 11 Type of School: (X)Public ()Private
5.	Race/Ethnicity: (Voluntary) (2)Black ()White ()Hispanic ()Asian ()Other
6.	Sex: ()Male (x)Female WGPA:
7.	Georphysical Fluid Dynamics Institute. Florida State University
8.	Installation
	name Dr. Robin J. Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate
9.	Mentor(s).
	name
10.	Principal Discipline of Research: Atmospheric Science
11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of
	flow fields obtained in laboratory experiments.
12.	Honors, Awards and Scholarships:
12.	Tionois, Tivales and Seneral Services
13.	Activities/Hobbies:

1.	Name: Sherle	ock	Terra	
.	las		first	
2.				
edacted				(00h) k00 1071
3.	School Address,	19_{96} , if app	name	(904) 488-1971 phone
	500 Tennessee	Street, Tallaha		P
4.	Expected Major/	University Enroll	ed in: Physics	
5.		pleted_12	Type of School: (X)Public	()Private
<i>5</i> . 6.			lack (x)White ()Hispanic	
7.	Sex: ()Male		WGPA:3.2	
	- Geo	nhysical Fluid	Dynamics Institute, Flor	rida State Universit
8.	na	me		
_			Associate Scholar/Scient ffer, Professor of Metec	ntist orology and GFDI Ass
9.	Mentor(s):	RICHARD L. FIE	ilei, iloiebboi oi ilea	01.07.080
9.	na	me	title	0.1.0.2.0.3.
9. 10.	na	me	title	0.208,
	na Principal Discip	me line of Research:	Atmospheric Science	
10.	na Principal Discip Major Tasks Per	me line of Research: rformed:Digiti	title	
10.	na Principal Discip Major Tasks Per	me line of Research: rformed:Digiti	Atmospheric Science zing of velocity vector	
10.	na Principal Discip Major Tasks Per	me line of Research: rformed:Digiti	Atmospheric Science zing of velocity vector	
10. 11.	na Principal Discip Major Tasks Per flow fields ob	me line of Research: rformed: Digiti tained in labor	Atmospheric Science zing of velocity vector atory experiments.	s from photographs o
10.	Principal Discip Major Tasks Per flow fields ob Honors, Awards	me line of Research: rformed:Digiti tained in labor s and Scholarships	Atmospheric Science zing of velocity vector atory experiments. Golden Glove Award (S	s from photographs of
10. 11.	Principal Discip Major Tasks Per flow fields ob Honors, Awards	me line of Research: rformed:Digiti tained in labor s and Scholarships	Atmospheric Science zing of velocity vector atory experiments.	s from photographs of
10. 11.	Principal Discip Major Tasks Per flow fields ob Honors, Awards	me line of Research: rformed:Digiti tained in labor s and Scholarships	Atmospheric Science zing of velocity vector atory experiments. Golden Glove Award (S	s from photographs of
10. 11.	Principal Discip Major Tasks Per flow fields ob Honors, Awards Along and Shoo	line of Research: rformed: Digiti tained in labor s and Scholarships tting Program Aw	Atmospheric Science zing of velocity vector atory experiments. Golden Glove Award (S ards, Ist Place in 3rd	s from photographs of occer), Sheriff's Rigrade Science Fair.
10. 11.	Principal Discip Major Tasks Per flow fields ob Honors, Awards Along and Shoo	line of Research: rformed: Digiti tained in labor s and Scholarships tting Program Aw	Atmospheric Science zing of velocity vector atory experiments. Golden Glove Award (S	s from photographs of occer), Sheriff's Rigrade Science Fair.
10. 11.	Principal Discip Major Tasks Per flow fields ob Honors, Awards Along and Shoo	line of Research: rformed:Digiti tained in labor s and Scholarships ting Program Aw lies:Ist_Seargen	Atmospheric Science zing of velocity vector atory experiments. Golden Glove Award (S ards, Ist Place in 3rd	s from photographs of occer), Sheriff's Rigrade Science Fair.

	1.	Name: Subramani Aruna							
	••	last first							
~ 	2.								
PII Reda	cted] 3.	School Address, 19 96 , if applicable Lincoln High (904) 487-2110 name phone							
		3838 Trojan Trail, Tallahassee, FL							
	4.	Expected Major/University Enrolled in: Science at University of Florida							
	5.	Last Grade Completed 11 Type of School: (X)Public ()Private							
	6. 7.	Race/Ethnicity: (Voluntary) ()Black ()White ()Hispanic (x)Asian ()Other Sex: ()Male (x)Female WGPA: 4.57							
		DOM: ()ANALY ()							
	8.	Installation Geophysical Fluid Dynamics Institute, Florida State University name							
	9.	Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate name title							
	10.	Principal Discipline of Research: Atmospheric Science							
	11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of							
		flow fields obtained in laboratory experiments.							
	12.	Honors, Awards and Scholarships: Honor Roll, Special Recognization Award,							
٠.		Academic Awards- English, Social Studies, French, etc. Principal Awards-							
		9th, 10th, 11th grade.							
	13.	Activities/Hobbies: Like to travel							

1.	Name: Switzer Benjamin
 .	last first
2.	
edacted	Cahaal Address 10 96 if applicable Godby High (904) 488-1325
3.	School Address, 19 96, if applicable Godby High (904) 488-1325 name phone
	1717 W. Tharpe St., Tallahassee, FL
4.	Expected Major/University Enrolled in:
5.	Last Grade Completed 12 Type of School: (x)Public ()Private
6.	Race/Ethnicity: (Voluntary) ()Black (X)White ()Hispanic ()Asian ()Other
7.	Sex: (X)Male ()Female WGPA: 3.7
8.	Installation Geophysical Fluid Dynamics Institute, Florida State University
9.	Mentor(s): name Dr. Robin J. Kung, Associate Scholar/Scientist Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate title
10.	Principal Discipline of Research: Atmospheric Science
11.	Major Tasks Performed: Computer Maintenance
12.	Honors, Awards and Scholarships: Honor Roll
13.	Activities/Hobbies: Martial Arts, Chess and quotes collector.

	1.	Name: Wallace Michelle .
	••	last first
Y2*********	2.	
PII Redact	ed] ■ 3.	School Address, 19 96 , if applicable Lincoln High (904) 487-2110
	٥.	name phone 3838 Trojan Trail, Tallahassee, FL
	4.	Expected Major/University Enrolled in: Biology, University of Miami, FL
	5.	Last Grade Completed 12 Type of School: (x)Public ()Private
	6.	Race/Ethnicity: (Voluntary) (X)Black ()White ()Hispanic ()Asian ()Other
	7.	Sex: ()Male (xx)Female WGPA: 4.46
	8.	Installation Geophysical Fluid Dynamics Institute, Florida State University name
	9.	Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate name title
	10.	Principal Discipline of Research: Atmospheric Science
	11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of
		flow fields obtained in laboratory experiments.
	12.	Honors, Awards and Scholarships: National Honor Society
		1995 Ist Place Leon County History Fair, Biological Institute of ONR Math
		Award, Biological Institute of ONR Science Award.
	13.	Activities/Hobbies: Piano, Reading.

	1.	Name: Wilson Jereme .
	· · ·	last first
	2.	
II Redac		
	3.	School Address, 19 96, if applicable Godby High (904) 488-1325 phone
		name phone 1717 W. Tharpe Street, Tallahassee, FL
	4.	Expected Major/University Enrolled in:
	5.	Last Grade Completed 11 Type of School: (x) Public () Private
	6.	Race/Ethnicity: (Voluntary) (X)Black ()White ()Hispanic ()Asian ()Other
	7.	Sex: (X)Male ()Female WGPA:
	8.	Installation Geophysical Fluid Dynamics Institute, Florida State University
	9.	Mentor(s): name Dr. Robin J. Kung, Associate Scholar/Scientist Mentor(s): Dr. Richard L. Pfeffer, Professor of Meteorology and GFDI Associate name title
	10.	Principal Discipline of Research: Atmospheric Science
	11.	Major Tasks Performed: Digitizing of velocity vectors from photographs of
•		flow fields obtained in laboratory experiments.
		Honors, Awards and Scholarships:Ist place public speaking, Ist place Poetry
	12.	
		Contest, Honor Roll, Certificates of Academics, P.E. Awards, Essay contest.
	13.	Activities/Hobbies: sing, write and read poetry.

1.	Name:Ku	ng	Rob	in		
1.		last	firs	st		
2.	Installation: _	Florida State Un	niversity,	Geophysical	Fluid Dynamics	Institute
	(904) 644-5	phone	_			
3.						
4.	Sex	() Female (x)	Male			
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6.	Highest Deg	ree Earned: Ph.D.				
7.	Principal Fie	ld of Research:G	eophysical_	Fluid Dynami	ics	
8.	Number of Y	ears of Mentorship):12	2		
9.	Number of A	Apprentices Supervi	sed this Yea	ır, 19 ⁹⁶ : <u> </u>	LO	

	1.	Name:Lo	ong		C	hristopher	•		
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	7.	Principal Fi	eld of Res	earch:	Atmopsheri	c Science			
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7.	Princip	al Field of Researc	h: Meteorolog	y and Geophy	sical F	luid Dyn	amics
8.	Numbe	er of Years of Ment	orship: <u>14</u>				
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13. ABSTRACT (Maximum 200 words)

In the spring of 1996, the guidance counselors of five local high schools were asked to recommend outstanding college-bound students who they thought would benefit most from our program. Ten students were selected to participate starting in the summer of 1996 and thirteen during the school year, 2 of whom were from the summer program, 6 of whom were from last year's program, and 5 new students during the academic year. Our student group consisted of 9 seniors, 7 juniors and 5 exceptional sophomores. The departure from our past concentration on seniors was motivated by our desire to expose students to science and scientific methodology at an earlier age. Some background information concerning the students who were selected appears in the following section. Further information pertaining to each apprentice is attached at the end of the report.

Students spent a total of 30 hours per week with the program for 10 weeks in summer and 10–20 hours per week during the school year. They participated in the research program via data handling and data processing with the aid of computer operated equipment, and in enrichment activities during the summer; including lectures, laboratory demonstrations, scientific films, field trips and a formal course and a weekly discussion session on the history of science using the book *Coming of Age in the Milky Way* by Timothy Ferris. A summary of their activities and projects is included in Section 3.

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